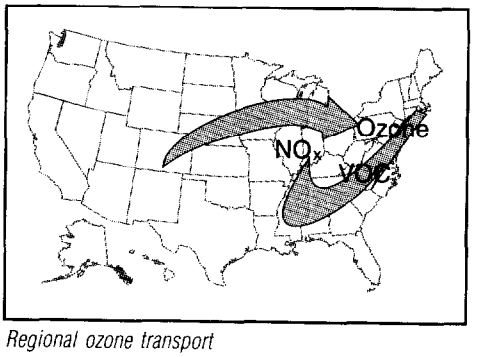
REGIONAL EFFORTS TO

Several regional organizations have been formed to address problems associated with long-range transport of air pollution. These organizations are described in the summaries below.

OZONE TRANSPORT COMMISSION (OTC)

The 1990 Clean Air Act Amendments established the OTC and the Northeast Ozone Transport Region in recognition of long-standing regional ozone problems in the northeastern U.S. The Commission comprises the governors or their designees and an air pollution control official from each of 12 states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia) and the District of Columbia. Administrators for three northeastern EPA Regions also participate.

The OTC states have agreed on a number of steps to reduce regional air pollution. For example, they have agreed to introduce a low-emission vehicle (LEV) program similar to that in California, which includes five categories of vehicles that meet increasingly stringent emissions standards. The OTC, automobile manufacturers, and EPA are also working on an agreement for a national LEV program, which would bring "cleaner cars" to all states, not just those in the northeastern U.S. The OTC has also agreed to significantly reduce NO_x emissions throughout the region from large stationary sources such as power plants and other large fuel combustion sources, using a market-based approach. By 1999, NO_x emissions in the OTC states are expected to be reduced by approximately 52 percent from the 1990 baseline.



Regional ozone transport

OZONE TRANSPORT ASSESSMENT GROUP (OTAG)

OTAG includes 37 states east of the Rocky Mountains. It is convened by the Environmental Council of States (an organization comprised of state environmental commissioners) for analyzing long-range transport of ozone and the compounds that form ozone. The goal of OTAG is to identify and recommend to EPA cost-effective control strategies for VOC and NO_x to facilitate compliance with the National Ambient Air Quality Standards for ozone. OTAG includes representatives from states with and without areas that fail to meet the national ozone standards. EPA, industry representatives, public health advocates, and environmentalists are also included in OTAG discussions. OTAG's regional-scale ozone modeling shows that transport plays an important role in local levels of ozone. OTAG is expected to complete its analyses and make its recommendations to EPA in 1997.

GRAND CANYON VISIBILITY TRANSPORT COMMISSION (GCVTC)

GCVTC was established by EPA in 1991 to advise on strategies for protecting visual air quality at national parks and wilderness areas on the Colorado Plateau. The Commission includes governors of Arizona, California, Colorado, Nevada, New Mexico, Oregon, Utah, and Wyoming, and representatives of the Hopi Tribe, Navajo Nation, Acoma Pueblo, Hualapai Tribe, and the Columbia River Inter-Tribal Fish Commission. Federal agencies, including the Department of Agriculture, the Department of the Interior, and EPA are also represented.

In 1996, the Commission released recommendations for improving visibility on the Colorado Plateau, including:

- *establishing an emissions cap/target for the region and an emissions trading program to keep the region within the cap*
- *decreasing mobile source emissions*
- *minimizing visibility impairment from controlled burning*
- *identifying areas called "clean air corridors" as important sources of clean air for national parks and other scenic vistas (sources of particulate emissions will be closely monitored in these areas).*

EPA expects to pursue methods for implementing these recommendations including continued regional coordination and development of regional haze rules.

SOUTHERN APPALACHIAN MOUNTAINS INITIATIVE (SAMI)

SAMI is a nonprofit, voluntary organization formed in 1992 to address regional air quality problems in southern Appalachia, particularly in high elevations, national parks, and recreation areas. Groups involved in this effort include Federal, state, and local agencies; environmental and industrial representatives; academic institutions; and private citizens. SAMI is identifying options for managing air emissions in the southern Appalachians, with special attention focused on how these options could affect the regional environment and economy. SAMI is expected to complete its analysis and make recommendations to states by 1999 on control strategies for pollutants that cause acid rain, visibility impairment, and ground-level ozone in the southern Appalachians.

ADDRESS AIR POLLUTION

Lake Michigan Ozone Study (LMOS) and Ozone Control Program (LMOP)

In 1989, EPA and the states of Illinois, Indiana, Michigan, and Wisconsin signed an agreement to study the ozone air quality problem in the Lake Michigan region. In 1991, this group signed a second agreement to establish control measures to improve regional air quality. These efforts have contributed to a regional understanding of ozone transport, as well as determining the steps necessary to control air pollutants that form ground-level ozone. Recent accomplishments of this group include developing and applying a state-of-the-art model for examining the transport of ozone in the Lake Michigan region, supporting initial state implementation plan efforts to control ozone-forming air pollutants for the four Lake Michigan states, and working cooperatively with other states as part of the OTAG discussions.

North American Research Strategy for Tropospheric Ozone (NARSTO)

NARSTO is a 10-year research program, chartered in 1995 as a public/private partnership. It includes researchers and policy makers of over 70 organizations from government, utilities, industry, and academia throughout Mexico, the U.S., and Canada. The goal of NARSTO is to develop a scientific and technological basis for managing ground-level ozone. NARSTO plans to publish its first Ozone State-of-Science Assessment Document in 1998, in which it will address assessment issues including:

- *significant research developments relating to ground-level ozone in the last 10 years*
- *urban and regional sources of VOC and NO_x emissions and transport of ozone*
- *the effectiveness of existing emission control measures.*

As a science-focused research program based on international cooperation, NARSTO will continue to be important in the resolution of long-range ozone transport problems across North America.

Southern Oxidants Study (SOS)

The SOS, established through cooperative agreements in 1991, is long-term, academic research designed to provide a better understanding of how ozone forms in the southeastern U.S. In addition to major academic institutions like the Georgia Institute of Technology and North Carolina State University, the private sector and Government have also played a significant role in the overall partnership. The Electric Power Research Institute, the National Oceanic and Atmospheric Administration, the Tennessee Valley Authority, EPA, and many state and local Southeastern environmental agencies and companies participated in major research programs in the metropolitan areas of Atlanta (1992) and Nashville (1994-95). As part of these efforts, data gathered at monitoring sites has provided insight into ground-level ozone formation in the Southeast and around the country.

Integrated Atmospheric Deposition Network (IADN)

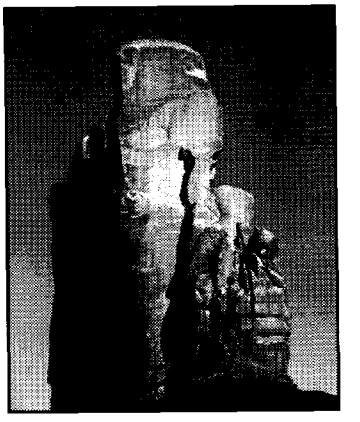
The IADN is a U.S./Canadian cooperative effort that involves toxic air pollutant monitoring. This network consists of five monitoring stations, one placed on each of the Great Lakes, that gather data on atmospheric concentrations of toxic air pollutants such as the pesticides lindane and dieldrin, heavy metals including lead and arsenic, and chemicals such as PCB and Polycyclic Aromatic Hydrocarbons. These monitors help determine the atmospheric contribution of these compounds to the concentrations found in the Great Lakes ecosystem. IADN helps to identify trends in concentrations of toxic air pollutants, assists in determining how to reduce toxic air emissions, and supports research toward understanding the effects of toxic air pollutants on the Great Lakes.

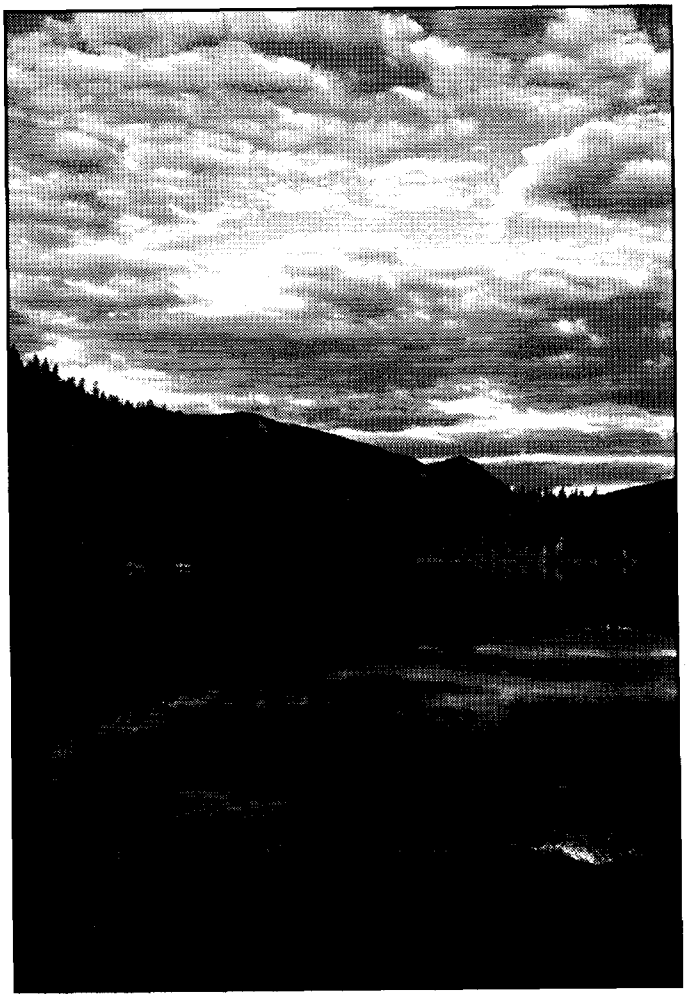
International Efforts

There are several other important cooperative efforts underway to address air pollution that crosses our national boundaries with Canada and Mexico. Under the La Paz Agreement, the U.S. and Mexico work to analyze and reduce air pollution in communities along our common border. Similarly, the U.S. and Canada have signed an air quality agreement to address air pollution issues of mutual concern, such as acid rain and ozone transport, and they also have embarked on a strategy to reduce and eliminate certain persistent toxic pollutants such as mercury and PCB. The North American Free Trade Agreement established the Commission for Environmental Cooperation to foster joint air pollution control efforts among all three countries and to ensure that pollution created in one country does not affect the health of the citizens and the environment in another. These efforts to date include establishing and upgrading monitoring networks along the U.S./Mexico border, developing a system for the U.S. and Canada to notify each other of major new sources of air pollution, and establishing an international air quality management commission to address pollution in the El Paso, Texas and Juarez, Mexico area.

CONCLUSION

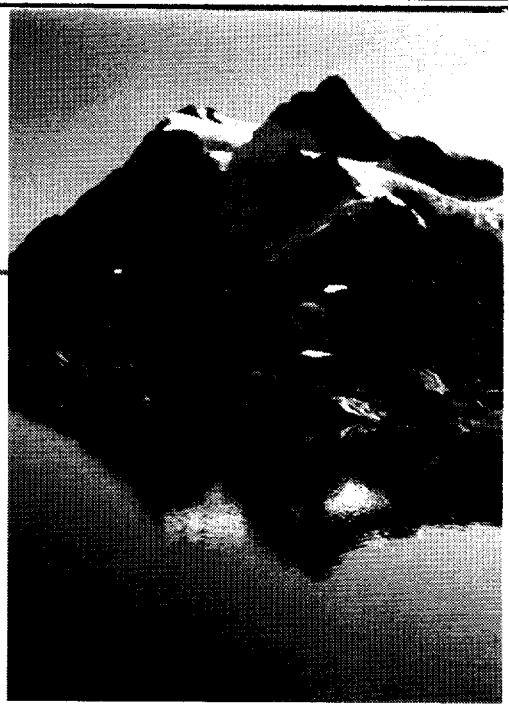
To effectively control air pollution, the U.S. Congress, EPA, and states have recognized the need for regional, as well as national and local, cooperation. Since air pollution does not respect political boundaries, regional approaches are often among the most effective ways to control its transport. The overall quality of the nation's air continues to improve, despite increases in population, gross national product, and vehicle miles traveled. Efforts to maintain and build on this progress into the 21st century will require continued cooperation among international, national, state, tribal, and local governments, as well as industry, environmental groups, and private citizens.





ACRONYMS

- DDT - Dichlorodiphenyl-trichloroethane
- EPA - U.S. Environmental Protection Agency
- GCVTC - Grand Canyon Visibility Transport Commission
- IADN - Integrated Atmospheric Deposition Network
- LEV - Low Emission Vehicle
- LMOP - Lake Michigan Ozone Control Program
- LMOS - Lake Michigan Ozone Study
- NARSTO - North American Research Strategy for Tropospheric Ozone
- NO_x - Oxides of Nitrogen
- OTAG - Ozone Transport Assessment Group
- OTC - Ozone Transport Commission
- PCB - Polychlorinated Biphenyls
- POM - Polycyclic Organic Matter
- ppm - parts per million
- SAMI - Southern Appalachian Mountains Initiative
- SO_2 - Sulfur Dioxide
- SOS - Southern Oxidants Study
- VOC - Volatile Organic Compounds



For More Information on Regional Air Pollution Transport Contact:

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U.S. EPA Region IX (Arizona, California, Hawaii, Nevada, Guam, American Samoa)
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U.S. EPA Region X (Idaho, Washington, Oregon, Alaska)
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Lake Michigan Ozone Study and Control Program
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North American Research Strategy for Tropospheric Ozone
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